Introduction: There are two types of Blood and Marrow transplantation, which are performed in treating course of patients with AML. Assessment of outcome, efficacy and adverse effects of each method is very important, in choosing the right protocol for patients. **Method:** 138 transplanted patients 68 (49.3%) male and 70(50.7%) female, with diagnosis of AML were included in present study during 1992-2003.The median age was 23 (ranged 3-58 yrs). Seventy-three patients (52.9 %) patients received transplantation as Allogeneic and 65 (47.1%) patients as Autologous. The source of stem cells was Bone marrow in 40 (29 %), Peripheral blood in 97 (70.3 %) and BM plus PBSC in 1(0.7%) patients respectively. Conditioning regimen for the Allogeneic was Busulphan 4 mg/kg for 4 days plus Cyclophosphamide 60 mg/kg for 2 days and for Autologous were ARA-C 100 mg/m^2 /BD for 3 days plus VP16 500 mg/m^2 for 3 days and Cyclophosphamide 60 mg/kg for 2 days. **Results:** 50 out of 138 (36.2%) patients were died. The most common leading causes of death were relapse in 26 (18.8%) cases and the acute and chronic GVHD in 7(5%) cases. 10 years overall survival (which was test by Kaplan-Meier) in Allogeneic and Autologous transplantation was 52%, The relapse frequency in Allogeneic and Autologous was 11 % and 28 % respectively, which was statistically significant by Pearson Chi-Square test (P-value = 0.01 and Odds Ratio = 3.91). Patients in allogeneic and Autologous groups were compared according to confounding factors such as age, sex and stem cell source and there were not any significant difference. **Conclusion:** Despite a remarkable difference in relapse frequency among these two groups we showed that there were not any significant difference in 10 years overall survival between allogeneic and autologous cases. Furthermore we conclude that Autologous PBSC transplantation is easier, cost effective and has less morbidity.

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CR1 ACUTE MYELOID LEUKEMIA AND HLA-IDENTICAL ALLOGENEIC TRANSPLANTATION (ASCT) PREPARED WITH REDUCED INTENSITY REGIMEN (RIC): LEUKEMIA CONTROL REQUIRES ADEQUATE PRE GRAFT CHEMOTHERAPY AND POST GRAFT GVHD

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We report a prospective investigation of HLA identical ASCT for pts with CR1 AML presenting contra-indications to standard ASCT (age > = 50 and/or any comorbidity) and/or poor prognosis features. All pts received a RIC: Fludarabin (30mg/m^2/j), Busulfan (8mg/kg) and thymoglobulin (2.5 mg/m^2). This investigation aimed to treat these pts with the best chemotherapy standard followed with an allogeneic immunotherapy. Thus intensity of chemotherapy prior to ASCT was increased stepwise and concomitantly immunosuppressive intensity of RIC was decreased. We treated 26 pts (Age: 52 (26-60); M/F: 11/15) (age >= 50:19; previous aspergillosis: 5, high WBC count: 6; secondary leukemia: 5; CR after 2 inductions: 4; poor cytogenetics: 8).All pts received GVHD prophylaxis (CSA:15 ; CSA+MTX:6; CSA+MMF:5) and either BM (10) or PBSC (16) graft). ASCT was performed without any previous intensive chemotherapy (Group 1: N = 5), after 1 cycle of high dose aracytine (3g/m^{2}x2/jx4) + idarubicin (12mg/m^2/jx2) (HIDAC) (Group 2; N = 15) or after HIDAC and an autologous PBSCT prepared with melphalan (140mg/m^2) (Group 3: N = 6). Allo PBSCT was performed 30 to 60 days after last chemotherapy. Fludarabine was decreased from 180 to 120 mg/m^2 and thymoglobulin from 10 to 2.5 mg/m^2. On October 2003, with a follow-up of 19 months (2-59), all pts engrafted achieving full chimerism on day 60(30-90). 6 presented grade ≥2 aGVHD (Cumulative incidence (CI) = 23%) and 10 cGVHD (CI = 42%). Owerall 2 pts died from transplant toxicity (TRM) (TRM CI = 8%) and 10 relapsed (Relapse CI = 38%) for an overall 2 year survival (OS) probability of 57%. All pts in group 1 relapsed and 1 is long term survivor after second transplant. Of the 15 pts with HIDAC alone, 5 relapsed (relapse CI: 33%), 1 died from GVHD (TRM CI: 7%) for a 2 year OS 68%. Of the 6 pts with HIDAC and Auto PBSCT, none relapsed and 1 died from GVHD. Relapse was statistically associated with the absence of pre-graft intensive chemotherapy (p = 0.02), the use of higher dose (5-7.5 mg) of ATG (p = 0.003) and the absence of acute and chronic GVHD (p = 0.001). Longer survival was associated with the use pre-graft intensive chemotherapy (p = 0.04). We conclude that in a population of high risk pts, RIC ASCT is associated with a low TRM and a potent GVL effect if adequate prior chemotherapy is delivered and conducts to high Os. Impact of prior Auto PBSCT seems benefic but needs longer follow-up and higher number of pts and is presently evaluated.

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EVALUATION OF BONE MARROW TRANSPLANATION AND ARSENIC TRIOXIDE IN THE TREATMENT OF AML M3 (AN EXPERIENCE IN IRAN)

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Background: Acute promyelocytic leukemia characterized by t(15;17) and PML/RARa gene fusion. **Material Methods:** From April 1993 till March 2003, 24 patients treated under BMT. Ten Autologous and 14 allogeneic transplantations were done. Sixteen peripheral bloods and 8 bone marrows were used as graft. Disease status before transplantation was CR1: 21, CR2: 1 and 1st relapse: 2. Conditioning regimen in autologous transplantation was Ara–C (1000 mg/m^2/bd x 3 days) + Cyclophosphamide (60mg/kg x 2 days) + Etoposide (500mg/m^2 x 3 days) and in allogeneic form the main regimen was Busulfan (4mg/kg x 4 days)+ Cyclophosphamide (60mg/kg x 2 days). Other conditioning regimen, which used in 2 patients in allogeneic transplantation, was Fludarabin (40mg/m^2/day/IV infusion x 5 days) + Busulfan (4mg/kg/day x 4 days). Cyclosoporin and Methotrexate were used as prophylaxis drugs for GVHD. The engraftment was evaluated with time of ANC > 500x10^8. Arsenic trioxide was used as other kind of treatment for AMLm3 in 76 patients from May 2000 till March 2003. Sixty-seven of patients were new case and 11 were in relapse state. Arsenic trioxide (0.15 mg/kg/IV infusion for 2-4 hours) was used from day of diagnosis till CR by morphologic criteria or till 60 days. **Results:** 70.8 % of patients (17/24) were in sustained CR after BMT and 76.3% patients (64/76) achieved this state in arsenic groups. Death occurred in 31.5% of patients (24/76) in arsenic and 20.8% of patients (5/24) in BMT group. The total 1, 3 and 5 years overall survival (OS) and disease free survival (DFS) was 79.4%, 66.2%, 66.2% and 85%, 56.6% , 56.6% in BMT group respectively. In Arsenic group the total 1 and 3 years OS and DFS was 70%, 63.1% and 89.6%and 73.9% respectively. **Conclusion:** Although arsenic trioxide is a suitable and economical method for treatment of AMLM3 but needs a long time for assessment the efficacy of it. We believe that bone marrow transplantation is a curable alternative for these patients especially in high-risk form of disease.